

APPENDIX A

AFFIDAVIT TESTIMONY OF SHASHI GOEL

The undersigned, Shashi Goel declares and states as follows:

1- I collaborated with Dean F. Jerding, Robert O. Banker, and Valerie Hudgins (a.k.a Valerie G. Gutknecht) to contribute to the subject matter described in the *Client User Interface Specification for Video-On-Demand Application Development on the Explorer 2000™ Digital Home Communications Terminal*, revision 1.10, dated August 31, 1998, a copy of which is attached as Exhibit A.

2- The above statement is made with the knowledge that willful false statements may be punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and may jeopardize the validity of the application or any patent issued thereon.

Shashi Goel
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4/12/2004
Date



Client User Interface Specification (Phase 1)
for
Video-On-Demand Application Development
on the
Explorer 2000™ Digital Home Communications Terminal

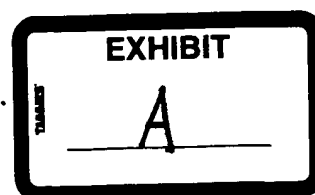
Revision 1.10

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1.0 Introduction

1.1 Purpose

This document specifies the design of the VOD Client User Interface. It contains a specification for the User Interface and the flow of the User Interface for the Phase 1 design.

1.2 Scope

This design is for the User Interface for the Phase 1 VOD Client application to be deployed for demonstration in the field, in September 1998.

1.3 Organization

1.4 Definitions and Acronyms

Term	Definition
VOD	Video On Demand
VOD Service	Video On Demand application, VOD Client
VOD Channel	The channel on which the VOD service is activated
VOD Title	In context of text title, movie's title that is available on the VOD Service. In context of video, the movie whose video is shown on the VOD channel.
VOD Session VOD Play Session Play Session Session	After the user rents a VOD title for viewing, the VOD Service (VOD Client) requests the VOD Server to setup a connection so that the video of the VOD Title can be shown to the user. The connection between the VOD Client and the VOD Server to show the video of the title (movie) is referred to as a VOD Session.
VOD Server	The software that furnishes the video for a VOD Title (movie) to the VOD Client
VOD Functions	Video On Demand functions, Play, Fast Forward, Rewind, Pause, Stop
VOD Keys	Keys for Video On Demand , Play , Fast Forward, Rewind, Pause, Stop
VOD Program	The video being shown/played for the VOD Title (movie)
VOD Title Length Title Length	The length in time to view a VOD Title (movie) from start to finish
VOD Rental Duration Rental Duration	The length of time in which the user is allowed to view the VOD Title (movie)
Block By Rating	The ability to restrict the viewing or purchasing of a program/movie/title which has certain rating or rating level
Parental Control	The ability to control the viewing or purchasing of a program/movie/title which has certain rating or rating level. The user will be required to enter a PIN (Blocking PIN) if the restricted program is attempted to watch or purchase
Rented Title	The title (movie) which has been rented for viewing
Quick Settings General Settings	Configuration Settings menu in the Resident Application
IPG	Interactive Programming Guide, part of Resident Application
Blocking PIN	Personal Identification Number to Block/Unblock a Service
Purchase PIN	Personal Identification Number to Confirm the purchase of a movie
Pop Up Window	Window which is displayed on top of the existing contents on the screen

1.5 References

Scientific-Atlanta VOD Application Interface

1.6 Revision History

Revision History			
Revision	Date	Description	Author
V1.0	6/30/98	Initial document	Shashi Goel
V1.1	8/31/98	Updated UI specification as of Phase 1 completion	Shashi Goel

2.0 VOD Client User Interface

The VOD Client User Interface (UI) consists of a Catalog Screen, Help Screen, Active Session screen, and various pop-up windows to support the purchase, parental control, and the information viewing of a VOD Title. These screens are pictorially demonstrated in last section of this document. Following is a brief description of each screen/pop-up window:

Catalog Screen: This screen lists the alphabetically sorted list of available VOD titles for rent by the user. Each title has its rating and the length in time listed in parentheses. The list of titles is scrollable using the remote control. The title list is non-wrapping. The upper half of the screen contains the graphics and logo area. The graphics and logos are not updateable from BFS, in Phase 1. However, packaging them at compile time, and selecting them at the run time can accommodate different graphics and logs.

Help Screen: This Screen is presented to the user, immediately after the user has rented a title. It displays the necessary information to operate the Remote Control for VOD operation.

Active Session Screen: This screen is displayed when the user is presses the STOP on the remote Control or the user tunes to the VOD channel, during the viewing of a rented title. This screen displays the rental information about the rented title e.g. the Title, Title Length, Rental Time Remaining.

Title Info. Pop up Window: This window displays all the available information on a title. This window is brought up when user presses the INFO key on a title.

Purchase Options Pop up Window: This window displays the purchase options for a title. For phase 1, only one option will be available, to view the title one time. The duration for viewing and the rental price are displayed on this window.

Purchase PIN Entry Pop up Window: This window is presented to the user to confirm the purchase of a title by requiring the user to enter the Purchase PIN number.

Block PIN Entry Pop up Window: This window is presented to the user to allow the purchase of a title whose rating is blocked or restricted from purchase. By entering the correct blocking PIN, the user can purchase the title. Entering the blocking PIN does not disable the blocking for future.

VOD Service Unavailable: This window is used to inform the user that the VOD service is not available at this time.

Please Wait Pop up Window: This window informs the user that the VOD service is being established, and indicates that the application is not locked up.

VOD Service Problem Pop up Window: This window informs the user of VOD Service problem during the viewing of a rented title, when the user tries to operate VOD Control while VOD server is experiencing a problem.

End Movie Rental Pop up Window: This window asks for user confirmation when the user tries to end the rental of the title before the rental time has expired.

Rental Period Ended Pop up Window: This Pop up Window appears at the end of the rental period to inform the user that the rental time has ended and Thanks the user for the rental of the Title.

VOD Rental Not Authorized Pop-up Window: This window appears when the user tries to rent a Title and the user's DHCT is not authorized for VOD rentals.

3.0 VOD Client User Interface Flow

3.1 Activation

VOD Service is activated when the user tunes to the VOD Channel. When the user tunes to the VOD Channel, if the user does not have a rented title, the Title Catalog screen is displayed. The user can then browse the title catalog to select a title for rent. If the user has a rented title, which is currently playing when the user tunes to the VOD Channel, the Active Session screen is displayed. If the user presses the PLAY key on the Remote Control, the title resumes playing from the last play position when the user tuned away from the VOD Channel.

3.2 Title Browsing

When the user tunes to the VOD Channel, if the user does not have a rented title, the Title Catalog screen is displayed. The Title Catalog screen displays a list of the all the VOD titles available for rent to the user. The user can browse the list of titles by using the Up/Down arrow keys or the PageUp/PageDown keys on the remote control by scrolling through the list. After reaching the end of the list, the user can use the Up arrow key or PageUp key to browse to the top of the list. Title list is non-wrapping.

3.3 Title Description

The user can view the description of a selected title by pressing the "A" key on the remote control. Available description for the title will be displayed. The user can return to the Title Catalog by pressing 'C' key on the remote.

3.4 Title Purchase

After browsing the list of available titles for rent, if the user wants to rent a title for viewing, the user can select the title and press 'B' key on the remote control to initiate the rent sequence. After the user presses the 'B' key on the remote, the "Title Rent Option" screen is displayed. This screen displays the title information (Title name, Title Category, Rating, Title Length, Rental Duration, Rental Price) for the selected title. The user can then continue the rent sequence by pressing 'B' key or cancel the rent sequence by pressing the 'C' key on the remote control. If the user presses the 'B' key to continue the rent sequence, the Blocking PIN Entry pop-up window is displayed if the rating of the title is blocked otherwise the Purchase PIN Entry pop-up window is displayed. If the Blocking PIN entry pop-up window is displayed and the user enters correct Blocking PIN, then the Purchase PIN pop-up window is displayed. After entering the correct Purchase PIN and if the VOD Session is available from the server side, the rent sequence is completed and the title is rented. While the session for the rented title is being set up with server, "Please Wait" barker may be displayed. After the session is set up, the video of the rented title is shown. If, for some reason, the VOD Session is not available from the server, the "VOD Service Not Available" barker is displayed and the rent transaction is canceled. The "VOD Service Not Available" barker is removed after some time out period or by the user pressing the 'C' key.

3.5 VOD Title Play Session

After the user has rented the Title, the help screen with the information on the Remote Control to control the VOD is displayed. When the user presses the PLAY key, the video for the title starts playing from the beginning immediately. The Rental Duration is longer than the Title Length to allow the user to use the VOD functions (Fast Forward, Rewind, Pause, Stop, and Play) during the Play Session. During the play session, the user can use the VOD keys on the remote control to fast-forward, rewind, pause, stop, and play. If the user tunes away from the VOD Channel during the play session, the title is paused. When the user returns back to the VOD channel during the Rental Duration, the Active session screen is displayed. When user presses the PLAY key, the video of the title is resumed from the point where it was left off. The play session ends when the Rental Duration expires or the user chooses to end the Rental by stopping the title and choosing the option to end rental on the Active Session Screen.

During the play session, all the settop functionality is still accessible in the normal way, i.e. IPG, Volume Up/Down, Channel Up/Down, General Settings, Quick Settings etc.. If the IPG is brought up during the VOD Program, the VOD Program will continue in the upper right quarter window as the user browses the IPG, in the same manner as for any other channel. After the VOD Rental Duration expires, the Title Catalog screen will be displayed again, if the user is on the VOD Channel.

3.6 Parental Control

Parental Control is provided to the user by allowing the user to Block By Rating . This is done in the General Settings as for other channels/services. If the user has blocked a particular rating, the user will be required to enter the Blocking PIN number to purchase the blocked rating VOD Title. Purchasing a blocked rating VOD Title using the Blocked PIN will not enable the rating block for future but will merely allow the purchase of the title. Block PIN entry will be required every time a blocked rating VOD Title is attempted for rental. Rating blocking can be enabled or disabled from the General Settings.

3.7 Session Termination

After the user has rented a title, the user is provided with Rental Duration time period to finish the viewing of the rented title. Once the Rental Duration expires, the session is terminated. The session will be available at all times during the Rental Duration no matter what the user does (whether the user watches the rented title or not). The user also has the option to end the rental before the Rental Duration expires by stopping the play and choosing the option to end rental on the Active Session screen.

4.0 VOD Keys

The VOD keys on the remote control can be used after the user sets the VCR/VOD key to VOD position. PLAY, STOP, FF, REW, and PAUSE keys will provide the user with the same capabilities as on a VCR, during the play session of a rented title.

5.0 VOD Play Options

Due to the possible limited resources available for VOD (bandwidth, number of streams supported by the server, number of streams per title, number of servers etc.), the user is offered a limited amount of time (Rental Duration) to view the rented title. Rented Duration time is longer than the length in time of the title, to allow the user to use the VOD functionality (FF, REW, PAUSE, STOP, PLAY) during the play session. To ensure that the user is given the opportunity to watch the title/movie in its entirety and the flexibility to use the VOD functionality, the following three options are presented for implementation of interactive VOD play sessions.

5.1 Option 1

Inform the user at the start of the play session of the time needed to finish the viewing of the title/movie in its entirety, and allow the user full and free control of VOD functions throughout the Rental Duration. It will be user's responsibility to finish viewing the program before the Rental Duration expires.

5.2 Option 2

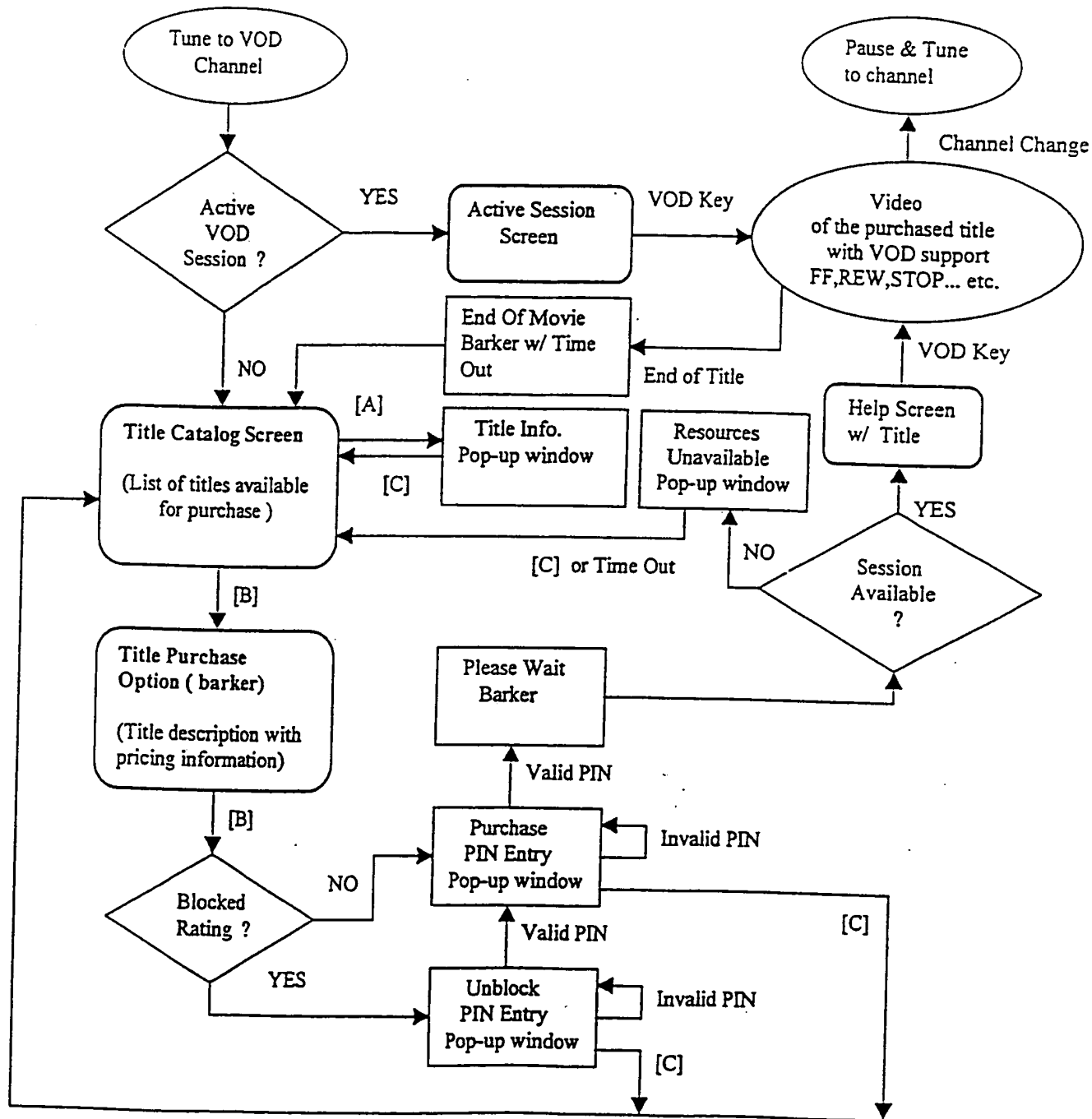
The user is allowed the VOD Period (Title Rental Duration – Title Length) to perform VOD functions (Fast Forward, Rewind, Pause, Stop, and Play). After this period (VOD Period) expires, the user is no longer allowed to perform the VOD functions (Fast Forward, Rewind, Pause, Stop, and Play) , and the video for the title is continuously played till the end of the title, at which time the Rental Duration expires. During the play session, if the user tunes to a different channel to view another program, the VOD title is paused until the duration of VOD Period. When doing so, the following scenarios are handled as follows:

- If the VOD Period expires and the user has not yet returned to the VOD channel, the VOD Program resumes playing and the user is alerted of the VOD program resumption.
- If the user returns to the VOD channel before the VOD Period expires, the VOD Program is resumed from where it was left off or paused.
- If the user returns to the VOD channel after the VOD Period has expired, the program is resumed from a point such that the Title ends in the time left for the Rental Duration.
- If the Rental Duration has expired when the user returns to the VOD Channel, the Title Catalog screen is displayed.
- If the VOD Program is finished to the end before the Rental Duration expires, the user is allowed to perform VOD functions for the remaining time in the Rental Duration.
- If the time remaining till the end of the title (movie) is greater than the Rental Duration, the title is advanced and played so that the movie ends at the end of the Rental Duration.

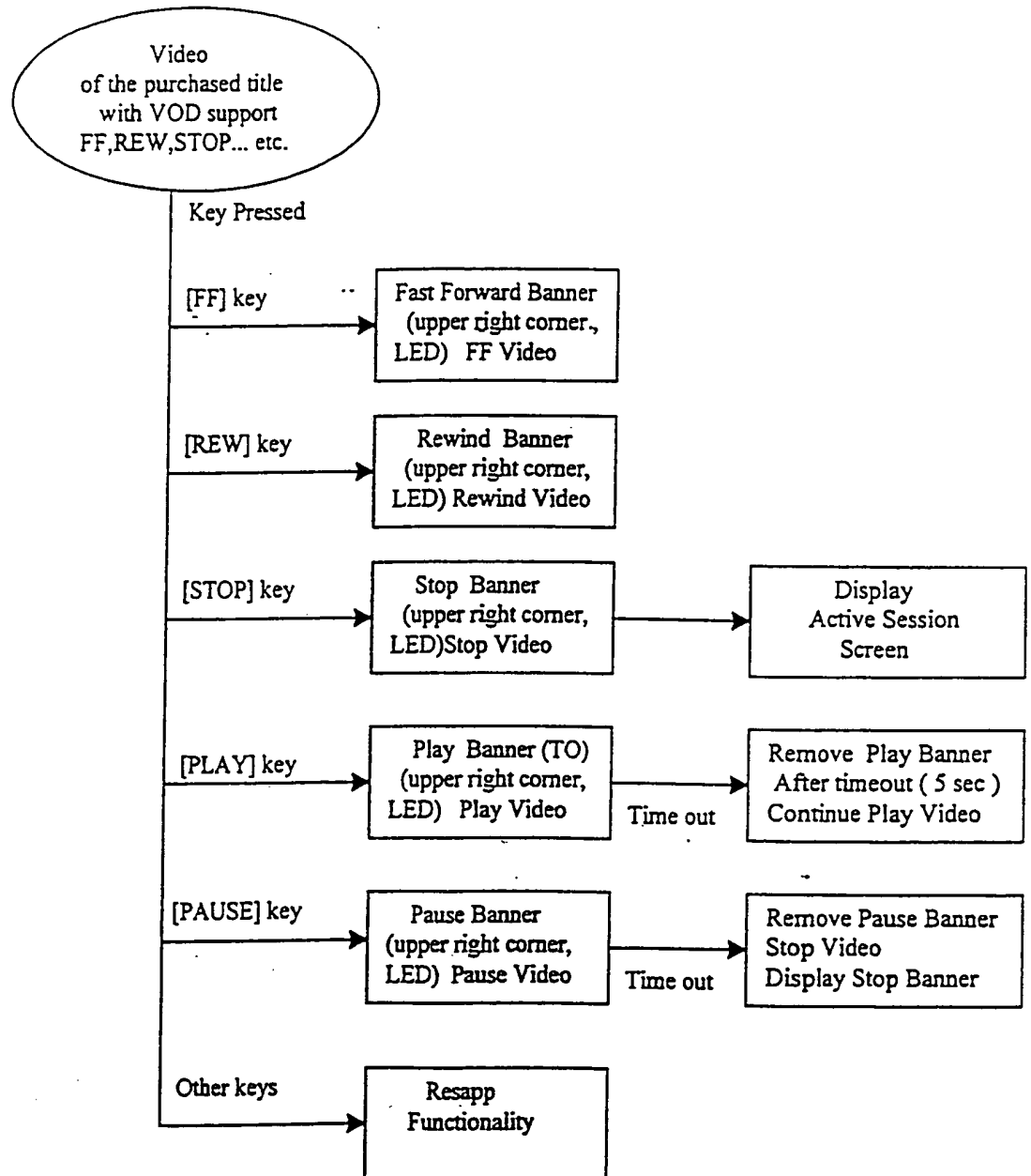
5.3 Option 3

Allow the user full and free control of the VOD functions throughout the Rental Duration. After the VOD Period (Title Rental Duration – Title Length) expires and the user attempts to use the VOD functionality, display an Alert to inform the user of time left in the Rental Duration is sufficient enough to view the title/movie to the end. After the user has been alerted, it is user's choice what he/she likes to do.

Video On Demand UI Flow Diagram



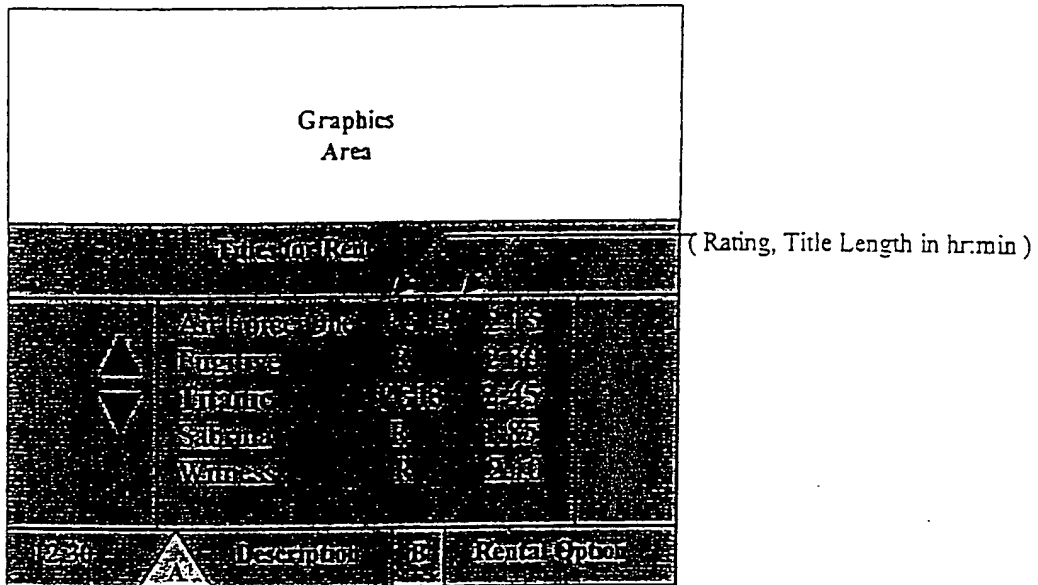
Video On Demand UI Flow Diagram



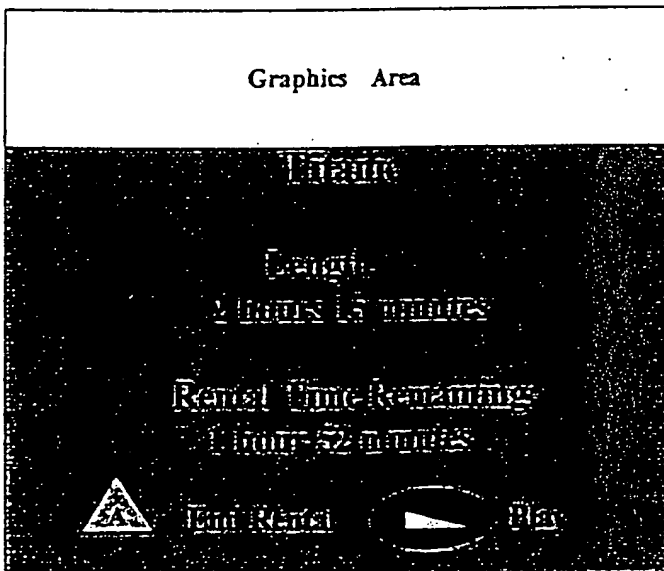
Video On Demand

UI Screens

VOD Title Catalog Screen




VOD Active Session screen



Video On Demand

UI Screens

Title Description (Pop-Up window)



Title Description
<p>Titanic</p> <p>Adventure PG-13 2 hours 15 minutes</p> <p>An epic tale of the two in the sea. Everybody dies. In the best tradition of the Hollywood movie making. Leonardo di Caprio! Oscars for scale. James Cameron's triumph.</p>
<div> Cancel</div>

(pops up when A key is pressed from the VOD Title Catalog screen)

Video On Demand

UI Screens



Rental Option (Pop-Up window)

Rental Option	
Titanic	
Adventure PG-13 2 hours 15 minutes	
An epic tale of the two in the sea. Everybody dies. In the best tradition of the Hollywood movie making. Leonardo di Caprio! Oscars for scale. James Cameron's triumph.	
Rent for 3 hours 30 minutes \$4.95	
 Rent	 Cancel



Video On Demand

UI Screens

Pin Entry (Pop Up Window)
(Rating Level Access)

PIN Entry	
VOD Title Rating Blocked Enter your Blocking PIN to ALLOW rental	
<div><div></div><div></div><div></div><div></div></div>	
 Accept	 Cancel

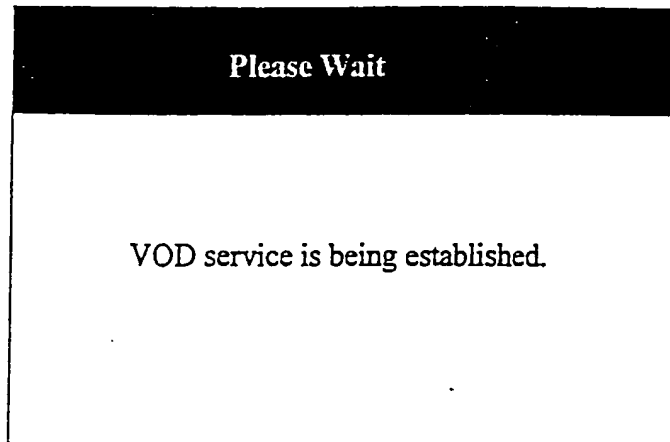
Pin Entry (Pop Up Window)
(Title Rental Access)

PIN Entry	
Enter your Purchase PIN to confirm the rental of the VOD Title you have selected	
<div><div></div><div></div><div></div><div></div></div>	
 Accept	 Cancel

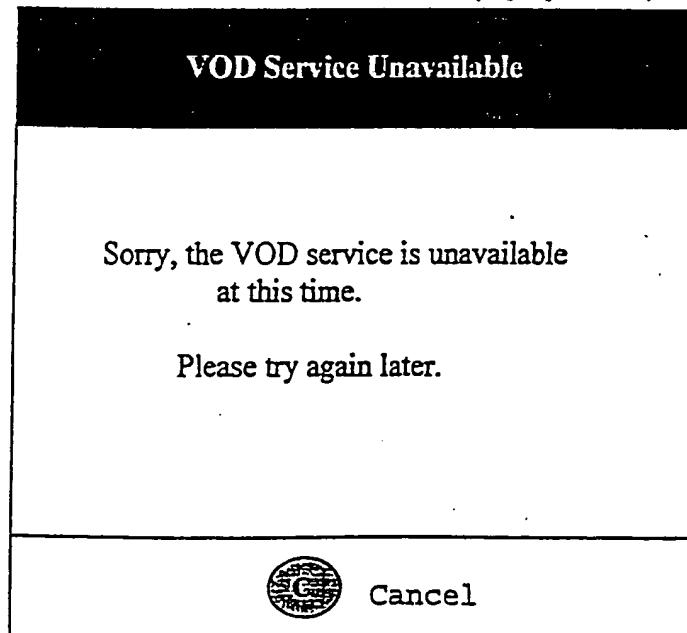
Video On Demand

UI Screens

Please Wait Barker (Pop-Up window)



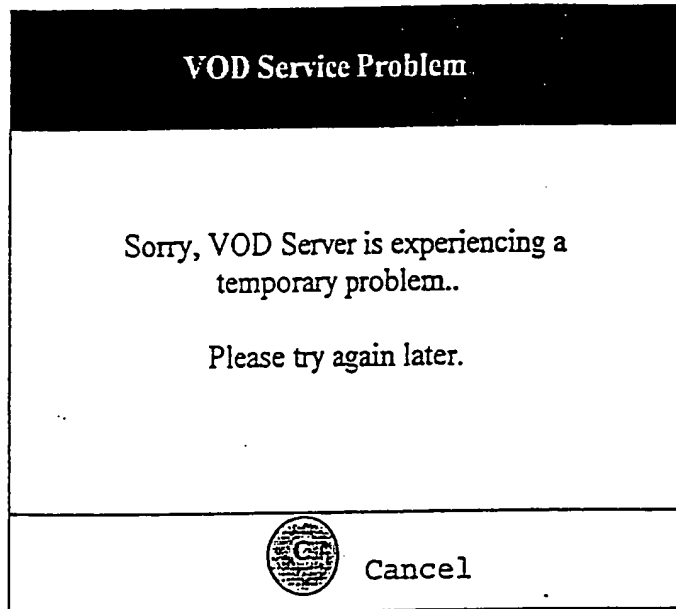
VOD Service Unavailable (Pop-Up window)



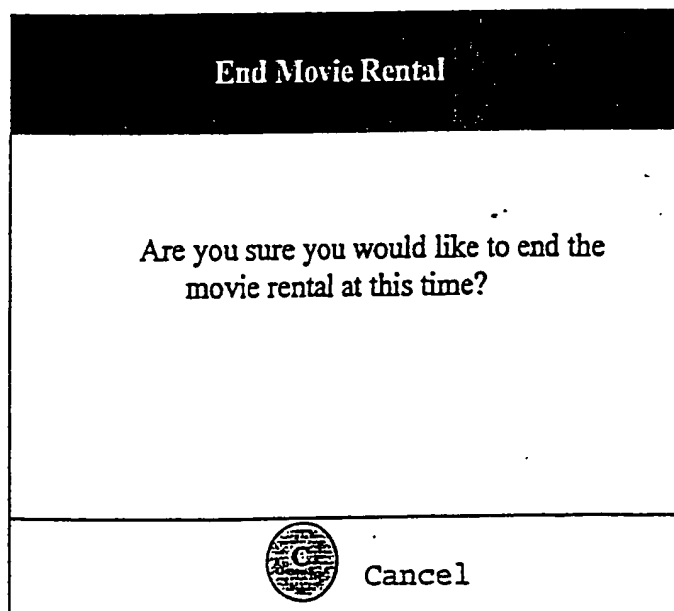
Video On Demand

UI Screens

VOD Service Problem (Pop-Up window)



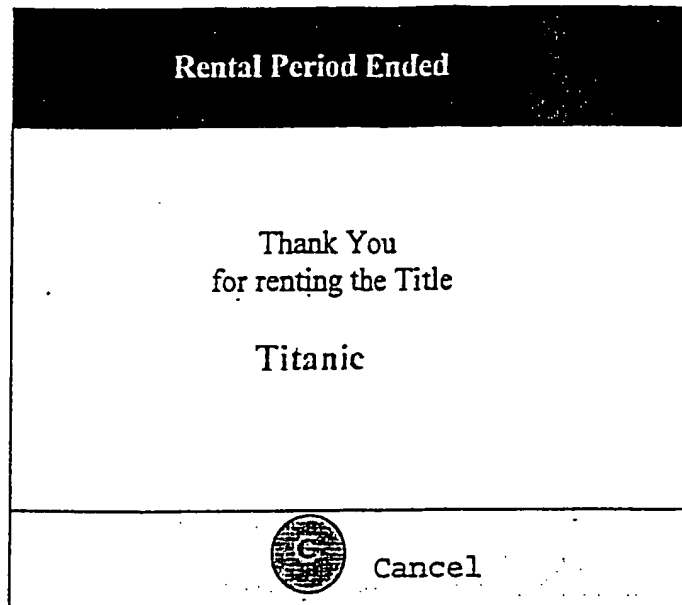
End Movie Rental (Pop-Up window)



Video On Demand

UI Screens

Rental Period Ended (Pop-Up window)



VOD Not Authorized (Pop-Up window)

